

Appl. No. 10/055,492  
Amdt. dated February 09, 2004  
Reply to Office Action of September 10, 2003

Docket No. A01125

AMENDMENTS TO CLAIMS:

1. (currently amended) An aqueous coating composition having improved adhesion to friable surfaces comprising:
  - (a) an emulsion polymer having a glass transition temperature of -20° C to 100° C and an average particle diameter less than 120 nanometers, said emulsion polymer consisting essentially of:
    - (i) at least one copolymerized ethylenically unsaturated nonionic monomer, each of said nonionic monomer(s) having a water solubility less than 8% by weight based on the weight of water; and
    - (ii) at least one copolymerized acid monomer, such that the acid number of said emulsion polymer is 30 to 100;  
wherein said emulsion polymer is made without the use of chain transfer agents; and
  - (b) 0.25-10%, by weight based on said emulsion polymer weight, nonionic surfactants selected from the group consisting of water-soluble alkyl phenol ethoxylates, alkyl alcohol ethoxylates, and mixtures thereof.
2. (original) The coating composition of claim 1 wherein the acid number of said emulsion polymer is 39 to 50.
3. (original) The coating composition of claim 1 wherein the average particle diameter of said emulsion polymer is less than 80 nanometers.
4. (currently amended) An aqueous coating composition having improved adhesion to friable surfaces comprising:
  - (a) an emulsion polymer having a glass transition temperature of -20°C to 100°C and an average particle diameter less than 120 nanometers, said emulsion polymer consisting essentially of:
    - (i) 8-99.5%, by weight based on said emulsion polymer weight, of at least one copolymerized ethylenically unsaturated first nonionic

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- monomer, each of said first nonionic monomer(s) having a water solubility of at least 8% by weight based on the weight of water;
- (ii) 0-91.5%, by weight based on said emulsion polymer weight, of at least one copolymerized ethylenically unsaturated second nonionic monomer, each of said second nonionic monomer(s) having a water solubility of less than 8% by weight based on the weight of water; and
- ~~(ii)~~(iii) at least 0.5%, by weight based on said emulsion polymer weight, of at least one copolymerized acid monomer, such that the acid number of said emulsion polymer is 4 to 100;
- wherein said emulsion polymer is made without the use of chain transfer agents; and
- (b) 0.25-10%, by weight based on said emulsion polymer weight, nonionic surfactants selected from the group consisting of water-soluble alkyl phenol ethoxylates, alkyl alcohol ethoxylates, and mixtures thereof.
5. (original) The coating composition of claim 4 wherein the average particle diameter of said emulsion polymer is less than 80 nanometers.
6. (withdrawn) A method for improving the adhesion of a dried aqueous coating composition to a friable surface comprising:
- (1) forming an aqueous coating composition comprising:
- (a) an emulsion polymer having a glass transition temperature of -20°C to 100°C and an average particle diameter less than 120 nanometers, said emulsion polymer consisting essentially of:
- (i) at least one copolymerized ethylenically unsaturated nonionic monomer, each of said nonionic monomer(s) having a water solubility less than 8%; and
- (ii) at least one copolymerized acid monomer, such that the acid number of said emulsion polymer is 30 to 100; and

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- (b) 0.25-10%, by weight based on said emulsion polymer weight, nonionic surfactants selected from the group consisting of water-soluble alkyl phenol ethoxylates, alkyl alcohol ethoxylates, and mixtures thereof; and
  - (2) applying said aqueous coating composition to a surface; and
  - (3) drying, or allowing to dry, said aqueous coating composition.
7. (withdrawn) The method of claim 6 wherein the acid number of said emulsion polymer is 39 to 50.
8. (withdrawn) The method of claim 6 wherein the average particle diameter of said emulsion polymer is less than 80 nanometers.
9. (withdrawn) A method for improving the adhesion of a dried aqueous coating composition to a friable surface comprising:
- (1) forming an aqueous coating composition comprising:
    - (a) an emulsion polymer having a glass transition temperature of -20°C to 100°C and an average particle diameter less than 120 nanometers, said emulsion polymer consisting essentially of:
      - (i) 8-99.5%, by weight based on said emulsion polymer weight, of at least one copolymerized ethylenically unsaturated first nonionic monomer, each of said first nonionic monomer(s) having a water solubility of 8% or more;
      - (ii) 0-91.5%, by weight based on said emulsion polymer weight, of at least one copolymerized ethylenically unsaturated second nonionic monomer, each of said second nonionic monomer(s) having a water solubility of less than 8%; and
      - (ii) at least 0.5%, by weight based on said emulsion polymer weight, of at least one copolymerized acid monomer, such that the acid number of said emulsion polymer is 4 to 100; and
    - (b) 0.25-10%, by weight based on said emulsion polymer weight, nonionic surfactants selected from the group consisting of water-soluble alkyl phenol ethoxylates, alkyl alcohol ethoxylates, and mixtures thereof; and
  - (2) applying said aqueous coating composition to a surface; and
  - (3) drying, or allowing to dry, said aqueous coating composition.

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10. (withdrawn) The method of claim 9 wherein the average particle diameter of said emulsion polymer is less than 80 nanometers.
11. (new) The composition of claim 1 wherein the amount of said nonionic surfactants is 3-8% by dry weight based on the dry weight of said emulsion polymer.
12. (new) The composition of claim 4 wherein the amount of said nonionic surfactants is 3-8% by dry weight based on the dry weight of said emulsion polymer.